



CIAT in Africa Roadmap 2017-2020

Four themes for impact



To promote more productive, profitable agriculture and healthier diets at no environmental cost by providing a scientific basis for development investments and policies.

Sub-Saharan Africa is undergoing rapid transformation due to increasing urbanization, income and lifestyles changes, intensification and homogenization of farming systems, and climate change.

These present both challenges and opportunities for millions of smallholder farmers. At CIAT, we believe that agriculture will continue to be the engine of economic growth in the region for decades to come. But reaching the continent's potential requires innovative science to ensure agriculture is competitive, efficient and sustainable, that it produces healthy, affordable food for all, while not adversely affecting the ecosystems and landscapes upon which we all depend. To meet the United Nations' Sustainable Development Goals (SDGs), it is necessary to understand priorities which both public and private actors can invest in.

Power of partnerships

Our partners – the private sector, NGOs, governments, development partners, and farmers will remain vital to our work. As well as involving them closely in the research process, our findings will help them make informed investments in agriculture, prioritizing limited resources for a healthier, wealthier continent for our families today – and for our children to inherit.

Four thematic areas of focus

Our Africa Roadmap, which sets out CIAT's vision for the region over the next three years, draws on the organization's 50 years of scientific expertise in crop

improvement and sustainable agriculture, together with new approaches that aim to improve food systems and landscapes in the region more broadly. We will achieve this focusing on four thematic areas:





Theme 1

Leveraging markets through improved productivity and competitiveness

The challenge

To run successful and profitable agricultural businesses, smallholder farmers need improved crop varieties, good quality and affordable seed, organized channels to sell their produce, and access to market information, among many other things. Yet too often, they find themselves trapped in a vicious cycle: low quality seed and inadequate agricultural practices leading to low productivity.

How we will tackle it

Crop improvement: common beans and tropical forages

Beans are already the most-traded food commodity in East Africa, a major source of income for farmers, and vital for healthy diets in rural and urban areas. We develop nutritious, resilient beans tailored to specific markets, contributing to healthier diets, improved crop and soil management practices, and better incomes for local bean farmers. In addition, while livestock farmers lack resilient forages grown in sustainable livestock systems, potentially enabling millions of smallholders to tap lucrative demand for meat and milk, reducing greenhouse gas emissions and restoring degraded land, we draw on CIAT's collections of bean and tropical forages – the largest in the world – to support the development and improvement of high-yielding beans and forages adapted to specific conditions.

Seed system development

CIAT will actively engage the private sector along the forage and bean value chains, building capacity among producers and entrepreneurs and empowering women and youth, to make affordable seed of consistent quality available on local markets.

Scaling up adoption of good agricultural practices

Using a participatory learning process, engaging communities and empowering youth and women, CIAT will improve integration of new varieties into local crop-livestock farming systems, strengthening best management practices, farmer learning, and testing of promising technologies across diverse landscapes.

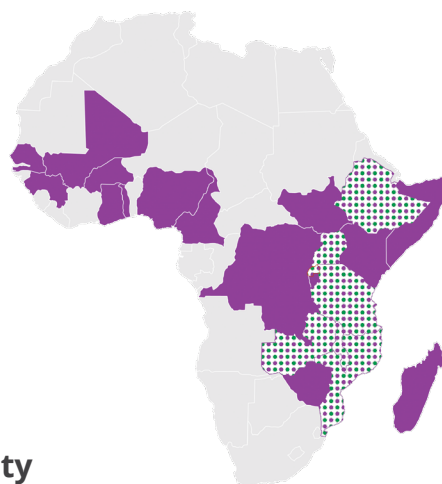
Linking farmers to markets, competitiveness and inclusive growth

CIAT is well placed to link food producers with distributors and consumers, including for beans and forage seeds, making them available to more people. Working with national partners in 30 countries,

we build confidence among producers, traders, consumers, and investors to improve efficiency across production, distribution, and consumption “hubs” through commodity corridors. This will enable farmers - including those in fragile and post-conflict states - to produce and sell more beans and livestock products at a price that both profits farmers and benefits consumers.

Results

- Strong linkages across the value chain are established for forages and beans.
- Quality seeds are available locally, and good agricultural practices are adopted.
- Incomes for smallholder producers, especially women, are increased.
- Farmers can access insurance, information, credit, and technology.
- Farmers have improved resilience to global environmental changes.
- More nutritious, diverse foods available at household level.



Priority countries:

- **Beans:** Burkina Faso, Burundi, Cameroon, Ethiopia, Ghana, Guinea, Kenya, Madagascar, Malawi, Mali, Mozambique, North Eastern Nigeria, Rwanda, Senegal, Somalia, South Sudan, Tanzania, The Democratic Republic of Congo (DRC) Togo, Uganda, Zambia, Zimbabwe.
- **Beans and Forages:** Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda, Zambia.



Theme 2

Agriculture for improved nutrition and health

The challenge

Africa is the only continent in the world where poverty and malnutrition are on the rise. The African Development Bank estimates that, by 2030, Africa will have 200 million children below the age of five; with stunting on the increase (WHO), a majority of these children will be stunted unless action is taken. Research has shown that for every dollar invested in improving nutrition, a country can get 16 dollars in returns. Agriculture is central to this: it is a source of nutritious food and income, enabling families – especially women – to afford more diverse foods and services, such as better healthcare.

How we will tackle it

We will generate research that creates a shared understanding of the nexus between agriculture, food systems, nutrition, and resilience, and provides evidence linking agriculture and food systems interventions with reduced malnutrition rates and improved resilience among communities. By catalyzing policy dialogue advocating for resilient food systems, innovations will support high-quality diets at household level and nutrition actions will focus on using a food systems approach to intervene in the following ways:

Generate knowledge and provide advice on the link between agriculture and nutrition

CIAT will continue to build evidence of the positive impacts on nutrition that result from interventions in the agricultural sector, to guide decision makers on where to prioritize investments.

Strengthened engagement with the private sector to improve nutrition

We will focus on promoting the production and consumption of nutritious foods, including biofortified beans, in collaboration with the private sector. Our research can help identify which public-private partnerships can best improve diets, and which incentives will spur the private sector to champion healthy eating.

Promote policies that aim to improve nutrition

CIAT will strive to lead dialogues to influence national policies in support of improved nutrition, through initiatives such as the Global Panel on Agriculture and Food Systems for Nutrition.

Develop a Nutrition Early Warning System (NEWS)

CIAT is developing a mechanism to detect emerging food and nutritional crises before they take hold. NEWS will use big data approaches to help alert governments and give options for early action.

Cross-cutting research and alignment to regional initiatives

CIAT will mainstream nutrition research in all its work in Africa, and align with continent-wide nutrition initiatives. This means ensuring nutrition objectives are integrated into broader programs, for example, to track diet quality and improve education at the household level.

Results

- Consumers have better access to more nutritious food.
- Private sector food companies actively promote more nutritious foods.
- Improved systems to plan, manage, and evaluate nutrition interventions in agricultural projects are mainstreamed.
- Evidence of the links between agricultural interventions and improved nutrition is generated.



Priority countries:

- Burundi, Ethiopia, Rwanda, Madagascar, Malawi, South Sudan, Zimbabwe.



Theme 3

Transforming farms and landscapes for sustainability

The challenge

About two-thirds of Africa's land is degraded, while three percent of GDP is lost annually from soil and nutrient depletion from farmland. Strategies are needed to increase agricultural production without putting more pressure on soils, land, water, biodiversity, and farmers' livelihoods – especially the livelihoods of women. In addition, restoring degraded landscapes could help bring abandoned land back into productive use.

At CIAT, we understand that we cannot work on sustainable landscapes without working on sustainable farms and vice versa. We have an integrated land restoration approach that focuses on both farms and landscapes, and the ecosystem services that connect these. Since there is increasing recognition that agricultural transformation will require innovative financing and business models, develop partnerships and business models, which deliver sustainable farm and landscape solutions for smallholder farmers and beyond.

How we will tackle it

Farm systems

CIAT's work on sustainable farms has three components: Farming systems design, to develop context-specific crops and livestock technologies with appropriate management strategies; technologies adoptable by farmers when they understand drivers of and barriers to adoption; Impact at scale: tracking key indicators at multiple scales in ex-ante and ex-post impact assessments.

Land restoration

CIAT's work focuses on regenerating soils and landscapes. We use a combination of tools, such as estimating soil carbon sequestration potential, sustainable land management practices, and hydrologic modelling, to understand and restore carbon, nutrient, and water cycles – key ecosystem services – to deliver on sustainable agricultural intensification. Our historical expertise in plot, farm, and landscape work is coupled with innovative financing and business models linked to global initiatives such as AFR100 and the Land Degradation Neutrality Fund.

Social dimensions of land restoration

We understand that farm and landscape transformations do not take place in a socio-political vacuum but rather in complex and heterogeneous social environments with existing power structures. To achieve land restoration and agricultural intensification that are equitable for women, youth, and marginalized communities within these landscapes, we work to understand governance structures and institutions critical for true, long-term sustainability.

Results

- Farm households adopt sustainable crop-livestock technologies and management practices.
- Restored landscapes provide ecosystem services to farmers while on-farm ecosystem services are regenerated.
- Public and private stakeholders invest in large-scale land restoration projects.
- Appropriate governance solutions are adopted in land restoration efforts, resulting in equitable outcomes for the most marginalized communities.



Priority countries:

- Ethiopia, Ghana.
Kenya, Tanzania.



Theme 4

Investment planning for resilient agriculture

The challenge

Climate change and variability put crop productivity at risk, and make pest and disease outbreaks more likely to increase. Small-scale farmers in Africa are particularly vulnerable. The African Union, World Bank, and many institutions globally – as well as a growing number of private companies – have recognized the need to address climate change in their agricultural investments. Climate-smart agriculture (CSA) can help reduce the risk to agriculture and livelihoods, but there is a need to better integrate it into policies, programs, and projects.

How we will tackle it

Climate Innovation and Policy Hubs

We will generate and share robust evidence of the risks associated with climate change and opportunities for CSA, to guide investment and policy decisions. This includes quantifying trade-offs between CSA options, scenario analysis, and economic analyses to show value for money in investing in CSA.

Climate-smart value chains and business models

CIAT is working with development partners to support 'climate profiling' to prioritize climate investments, integrating climate-smart approaches into agricultural value chains and services such as farmer field and business schools.

Data-driven agronomy and climate information services

CIAT will use big data analytics to produce targeted, site-specific information for farmers, enabling better decisions about what to plant, when to plant, crop management, and where to sell their produce.

National and international engagements

By engaging with the public and private sector, we will promote the adoption of appropriate technologies. CIAT will generate evidence to help governments in priority countries scale up CSA.

Results

- Farmers will have better information about what to plant, how to manage their crop, when to harvest, and where to sell.
- Decision makers will have a good understanding of where to prioritize investment to improve climate resilience, adaptation, and mitigation to better enable positive change at scale.
- Governments and policy makers will have a clear indication of interventions needed in specific areas to tackle climate vulnerabilities.
- Partnerships will be forged between national, regional, and smallholder stakeholders.



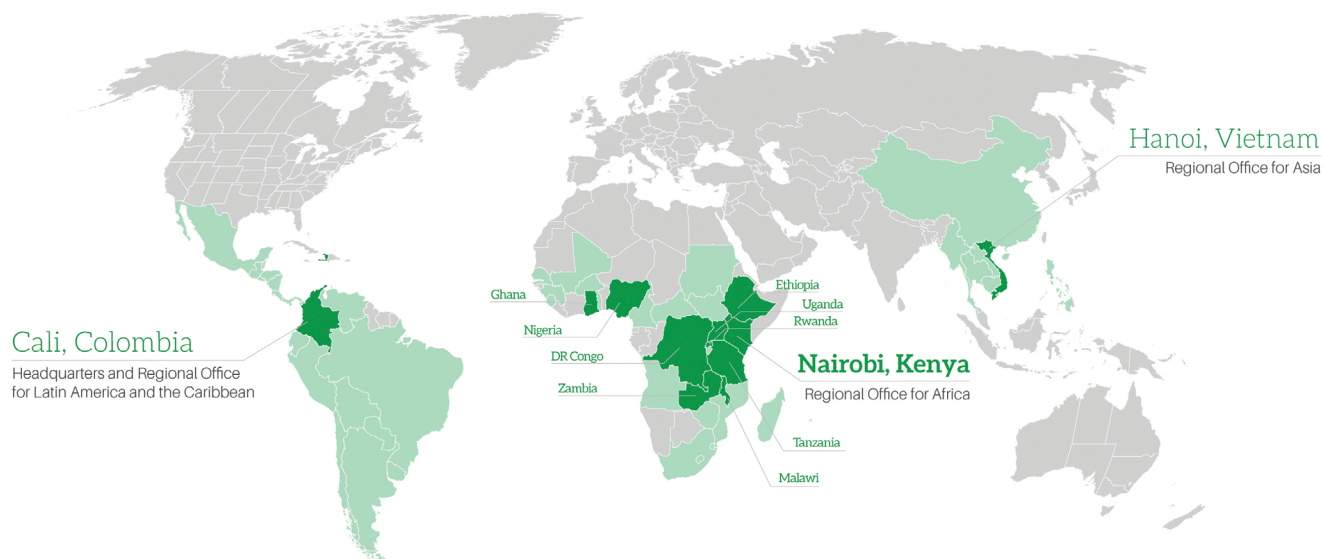
Priority countries:

- Côte d'Ivoire, Ethiopia, Ghana, Kenya, Nigeria, Tanzania, Uganda

Articulating efforts in the region

Our efforts are aligned, among others, with the following initiatives: Sustainable Development Goals (SDGs); Comprehensive Africa Agriculture Development Programme (CAADP); Feed Africa (African Development Bank); Alliance for a Green

Revolution in Africa (AGRA) Framework; AFR100 (the African Forest Landscape Restoration Initiative); Africa CSA Alliance; Scaling Up Nutrition (SUN); and National Agriculture Investment Plans (NAIPs).



Regional Office for Africa

Duduville Campus, off Kasarani Road
P.O. Box 823-00621
Nairobi, Kenya
Phone: +254 20 8632800 or
+254 721 574967

Debisi Araba, Regional Director
✉ a.araba@cgiar.org

Theme 1 **Robin Buruchara**
✉ r.buruchara@cgiar.org
An Notenbaert
✉ a.notenbaert@cgiar.org

Theme 2 **Mercy Lung'aho**
✉ m.lungaho@cgiar.org
Rodah Zulu
✉ r.m.zulu@cgiar.org

Theme 3 **Rolf Sommer**
✉ r.sommer@cgiar.org
Fred Kizito
✉ f.kizito@cgiar.org

Theme 4 **Evan Girvetz**
✉ e.girvetz@cgiar.org
Caroline Mwangera
✉ c.mwangera@cgiar.org



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